

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An apparatus for pulling a single crystal comprising
a chamber ~~means~~,
a crucible located in the chamber ~~means~~,
a heater for heating a material provided in the crucible so that the material is ~~melt~~
melted,
a radiation shield ~~located~~ arranged in the chamber ~~means~~ so as to surround a region in
which a single crystal is pulled, for regulating flow of inert gas introduced therein, wherein a
seed crystal is immersed into the ~~melt~~ melted material to pull the single crystal,
the radiation shield ~~being made of~~ comprises a graphite based material coated with
silicon carbide,
the radiation shield comprising a main shield body, a horizontal part, and a rising part,
the main shield body being ~~located~~ arranged so as to surround the single crystal and
~~being formed of~~ comprising a hollow pipe shape,
the horizontal part extending inward and substantially horizontally, relative to a
surface of the melt material, from the main shield body and ~~being formed of~~ comprising a
ring shape,
wherein the rising part rises upward along the single crystal and ~~is formed of~~
comprises a ring shape,
a first curvature formed between the main shield body and the horizontal part,
a second curvature formed between the horizontal part and the rising part, [[and]]
wherein each of the first curvature and the second curvature ~~has~~ comprises an inside
corner with a curved surface,
a mounting part extending outward from an upper end of the main shield body, the
mounting part comprises a ring shape, and
a third curvature with a curved surface, which is formed between the main shield body
and the mounting part,

wherein each curved surface of the first, second and third curvatures is formed of a circular arc or an elliptic arc in cross section, and has a radius of curvature of 5 mm or more.

2-3. (Cancelled)

4. (Currently Amended) An apparatus according to claim 1, wherein further comprising a heat insulating material with a ring shape which is supported by the main shield body, the horizontal part, and the rising part.

5. (Currently Amended) An apparatus according to claim 4, wherein further comprising a cover [[is]] provided for covering the heat insulating material, the covering being constructed dividable into a plurality of rings having different heat conductivities.

6. (Previously Presented) An apparatus according to claim 1, wherein the main shield body and the horizontal part are arranged substantially in an obtuse angle, and the horizontal part and the rising part are arranged substantially in a right angle.

7-10. (Cancelled)

11. (Previously Presented) An apparatus according to claim 4, wherein the main shield body and the horizontal part are arranged substantially in an obtuse angle, and the horizontal part and the rising part are arranged substantially in a right angle.

12. (Previously Presented) An apparatus according to claim 5, wherein the main shield body and the horizontal part are arranged substantially in an obtuse angle, and the horizontal part and the rising part are arranged substantially in a right angle.

13. (New) A radiation shield for a single crystal pulling apparatus comprising:

a main shield body comprising a hollow pipe shape;
style="padding-left: 40px;">a horizontal part extending inwardly from the main shield body and substantially perpendicularly with respect to a longitudinal axis through the main shield body;

a rising part which rises from the horizontal part at a point on the horizontal part that is distal from the main shield body;

a first curvature formed between the main shield body and the horizontal part; and
a second curvature formed between the horizontal part and the rising part;

wherein each of the first curvature and the second curvature is formed of an arc (i) comprising a circular or elliptic cross section and (ii) comprising a radius of curvature of 5 mm or more; and

wherein the radiation shield comprises a graphite based material and a silicon carbide coating on the graphite based material.

14. (New) A radiation shield according to claim 13, further comprising a mounting part extending outwardly from an upper end of the main shield body and a third curvature formed between the main shield body and the mounting part.

15. (New) A radiation shield according to claim 13, further comprising a heat insulating material supported by the main shield body, the horizontal part and the rising part.

16. (New) A radiation shield according to claim 13, further comprising a cover for covering the heat insulating material, the cover being dividable into a plurality of rings having different heat conductivities.

17. (New) A radiation shield according to claim 13, wherein the main shield body and the horizontal part are arranged at a substantially obtuse angle relative to one another, and the horizontal part and the rising part are arranged at a substantially right angle relative to one another.

18. (New) A radiation shield according to claim 13, wherein the main shield body comprises a frustum shape.

19. (New) A single crystal pulling apparatus comprising a radiation shield according to claim 13.